

CLAIM SET AS AMENDED:

1. (Currently Amended) A method for ~~measurement of~~ measuring water content of a liquid, comprising the steps of:

electrically measuring properties of the liquid ~~by a relative value measurement method in order to determine a relative water content of the liquid at least substantially simultaneously and repeatedly;~~ and electrically measuring the properties of the liquid by an absolute-value measurement method in order to determine a dielectric coefficient of the liquid, ~~wherein said measurements are repeated at two different temperatures in rapid succession so that the water content of the liquid stays substantially constant and by a direct~~ relative-value measurement method in order to determine a relative water content of the liquid.

2. (Currently Amended) The method according to claim 1, wherein a temperature dependence of the dielectric coefficient of an entirely dry liquid is determined by measuring essentially simultaneously the (ϵ_r) a_w and the temperature of the liquid at at least two temperatures,

wherein $(\epsilon_r) = (\epsilon_0) + F(\text{ppm})$,

~~wherein~~ (ϵ_0) = dielectric coefficient of entirely dry liquid, ~~and~~

$F(\text{ppm})$ = a function dependent on the water content,

$a_w = F_{\text{ppm}}/\text{ppm}_s(T)$,

$\text{ppm} = \text{volumetric proportion of water in solution} \times 10^6$, and

ppm_s = volumetric proportion of water in saturated solution x 10⁶.

3. (Currently Amended) The method according to claim 1, wherein ~~said relative water content measurement is carried out using a capacitive sensor~~ the measuring steps are repeated at two different temperatures in rapid succession so that the water content of the liquid stays at least substantially constant.

4. (Previously Presented) The method according to claim 1, wherein changes in results of water content measurements due to aging of the liquid are compensated for by virtue of using only most recent data of a measurement history for compensation for changes in a response of the measurement system.

5. (Previously Presented) The method according to claim 1, wherein aging of said liquid, advantageously oil, is indicated on a basis of changes in the value of the dielectric coefficient of entirely dry liquid (ϵ_0).

6. (Previously Presented) The method according to claim 1, wherein, in the step of measuring the relative water content, an auxiliary medium is used for absorbing the water contained in the liquid being measured.

7. (Previously Presented) The method according to claim 6, wherein said auxiliary medium is a thin-film polymer layer.

8. (Previously Presented) The method according to claim 6, wherein the water content of said auxiliary medium is determined by measuring its dielectric coefficient.

9. (Currently Amended) An apparatus for measuring water content of a liquid, said apparatus comprising:

first electrical sensor means for measuring a ~~first parameter of the~~ an absolute water content of the liquid being sensitive to changes in a dielectric coefficient; and

second electrical sensor means for directly measuring a ~~second parameter of the~~ relative water content of a the liquid; ; and

~~said first electrical sensor means measuring properties of the liquid by a relative value measurement method, and said second electrical sensor means measuring the properties of the liquid by an absolute value measurement method, whereby the second sensor means is sensitive to changes in the dielectric coefficient, and the first sensor means is sensitive to the relative water content,~~

~~wherein the first sensor means adapted for measuring the relative water content contains an auxiliary medium capable of absorbing water contained in the liquid being measured,~~

~~wherein the second electrical sensor means includes a first and a second electrode, and the first electrical sensor means includes a third electrode and one of either the first or the second electrode~~

means for controlling the first and the second electrical sensor means such that the properties of the liquid are electrically measured at least substantially simultaneously and repeatedly.

10. (Currently Amended) The apparatus according to claim 9, wherein ~~said~~ the first and the second sensor means sensitive to changes in the dielectric coefficient is are formed by ~~the first electrode and the second electrode, the first and the second electrode being two~~ interdigitated finger electrodes.

11. (Cancelled)

12. (Currently Amended) The apparatus according to claim 9, wherein the ~~second sensor means sensitive to changes in the dielectric coefficient is formed by a coaxial structure, wherein first electrode is formed by a center pin and a jacket having a net structure, the second electrode being permeable to water~~ is adapted for measuring the relative water content contains an auxiliary medium capable of absorbing water contained in the liquid being measured.

13. (Currently Amended) The apparatus according to claim ~~12~~ 9, wherein ~~said auxiliary medium is a thin film polymer layer~~ the first electrical sensor means and the second electrical sensor means forming a first sensor pair adapted to measure of the dielectric coefficient, and

one electrode of said first sensor pair also forming a part of a second sensor pair adapted to measure the relative water content.

14. (Currently Amended) The apparatus according to claim ~~12~~ 9, wherein ~~the apparatus contains means adapted to measure the dielectric coefficient of said auxiliary medium whereupon the relative water content of said auxiliary medium can be determined~~ the first electrical sensor means sensitive to the dielectric coefficient is formed by a coaxial structure.

15. (New) The apparatus according to claim 13, wherein the one electrode is formed by a center pin and a jacket having a net structure that is permeable to water.

16. (New) The apparatus according to claim 12, wherein said auxiliary medium is a thin-film polymer layer.

17. (New) The apparatus according to claim 13, wherein the apparatus contains means adapted to measure the dielectric coefficient of said auxiliary medium, whereupon the relative water content of said auxiliary medium can be determined.